

UNITED STATES PATENT APPLICATION

of

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for

INTERACTIVE CREATION AND ADJUDICATION OF HEALTH CARE INSURANCE CLAIMS

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1 and insurers. The cost of supporting these administrative systems has increased during
2 recent years, thereby contributing to today's costly health care system.

3 A significant portion of administrative costs is represented by the systems for
4 creating, reviewing and adjudicating health care provider payment requests. Such payment
5 requests typically include bills for procedures performed and supplies given to patients.
6 Careful review of payment requests minimizes fraud and unintentional errors and provides
7 consistency of payment for the same treatment. However, systems for reviewing and
8 adjudicating payment requests also represent transaction costs which directly reduce the
9 efficiency of the health care system. Reducing the magnitude of transaction costs involved
10 in reviewing and adjudicating payment requests would have the effect of reducing the rate of
11 increase of health care costs. Moreover, streamlining payment request review and
12 adjudication would also desirably increase the portion of the health care dollar that is spent
13 on treatment rather than administration.

14 Several factors contribute to the traditionally high cost of health care administration,
15 including the review and adjudication of payment requests. First, the volume of payment
16 requests is very high. Large health management organizations may review tens of thousands
17 of payment requests each day and tens of millions of requests yearly. In addition, the
18 contractual obligations between parties are complex and may change frequently. Often,
19 there are many different contractual arrangements between different patients, insurers, and
20 health care providers. The amount of authorized payment may vary by the service or
21 procedure, by the particular contractual arrangement with each health care provider, by the
22 contractual arrangements between the insurer and the patient regarding the allocation of
23 payment for treatment, and by what is considered consistent with current medical practice.

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1 During recent years, the process of creating, reviewing, and adjudicating payment
2 requests from health care providers has become increasingly automated. For example, there
3 exist claims processing systems whereby technicians at health care providers' offices
4 electronically create and submit medical insurance claims to a central processing system.
5 The technicians include information identifying the physician, patient, medical service,
6 insurer, and other data with the medical insurance claim. The central processing system
7 verifies that the physician, patient, and insurer are participants in the claims processing
8 systems. If so, the central processing system converts the medical insurance claim into the
9 appropriate format of the specified insurer, and the claim is then forwarded to the insurer.
10 Upon adjudication and approval of the insurance claims, the insurer initiates a check to the
11 provider. In effect, such systems bypass the use of the mail for delivery of insurance claims.

12 In partially automated systems, such as that described in the foregoing example, the
13 technician can submit a claim via electronic mail on the Internet or by other electronic
14 means. To do so, the technician establishes communication with an Internet service
15 provider or another wide area network. While communication is maintained, the technician
16 sends the insurance claim to a recipient and then either discontinues communication or
17 performs other activities while communication is established. Using such conventional
18 systems, personnel at the health care provider's office are unable to determine whether the
19 submitted claim is in condition for payment and do not receive any indication, while
20 communication is maintained, whether the claim will be paid.

21 Thus, while systems that permit electronic submission of insurance claims
22 marginally decrease the time needed to receive payment by eliminating one or more days
23 otherwise required to deliver claims by mail, they remain subject to many of the problems
24 associated with other claims submission systems. For example, it has been found that a

1 large number of insurance claims are submitted with information that is incomplete,
2 incorrect, or that describes diagnoses and treatments that are not eligible for payment. The
3 claims can be rejected for any of a large number of informalities, including clerical errors,
4 patient ineligibility, indicia of fraud, etc. The health care provider is not made aware of the
5 deficiencies of the submitted claims until a later date -- potentially weeks afterwards -- when
6 the disposition of the insurance claim is communicated to the health care provider. As a
7 result, many claims are subject to multiple submission and adjudication cycles, as they are
8 successively created, rejected, and amended. Each cycle may take several weeks or more,
9 and the resulting duplication of effort decreases the efficiency of the health care system.
10 Studies have shown that some insurance claim submission systems reject up to 70% of
11 claims on their first submission for including inaccurate or incorrect information or for other
12 reasons. Many of the claims are eventually paid, but only after they have been revised in
13 response to an initial rejection.

14 In order to attempt to minimize the number of claims that are rejected, physicians or
15 their staff have had to spend inordinate amounts of time investigating which treatments will
16 be covered by various insurers and insurance plans. The time spent in such activities
17 represents further efficiency losses in the health care system.

18 Depending on a patient's insurance plan and the diagnosis and treatment rendered,
19 the patient may be required to make a co-payment representing, for example, a certain
20 percentage of the medical bill or a fixed dollar amount. Because of the large number of
21 insurers and insurance plans, the amount of the co-payment can vary from patient to patient
22 and from visit to visit. Moreover, when a patient is not covered for certain treatment, the
23 patient may be liable for the entire amount of the health care services. It is sometimes
24 difficult for technicians at the offices of the health care provider to determine that amount of

In view of the foregoing, there is a need in the art for more fully automated claims processing systems. For example, it would be an advancement in the art to reduce the uncertainty as to whether a claim to be submitted is likely to be paid or rejected. Furthermore, it would be advantageous to provide a claims processing system that would more easily allow health care providers to know what patient and treatment information must accompany insurance claims. There also exists a need for systems that allow health care providers to easily learn of the status of submitted insurance claims.

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If the insurance claim is not in condition to be paid, the remote server transmits information to the client computer to inform the medical technician. The information transmitted to the client computer can include an indication of the reason for rejection of the claim and, optionally, suggestions on how to remedy the problem. For instance, if the

1 insurance claim does not include complete information, the medical technician can be
2 prompted to complete the claim form. The deficiency of the claim can be substantive, as
3 well, in that the treatment code could represent a treatment that is not considered to be
4 compatible with the diagnosis. In this case, the health care provider can change the
5 treatment, otherwise amend the claim form, or inform the patient that the insurance plan will
6 not cover the treatment. When a claim form has been amended, the new information can be
7 transmitted to the remote server to repeat the process of determining whether the claim is in
8 condition to be paid.

9 When the remote server determines that the claim is in condition to be paid, the
10 remote server transmits information to the client computer to notify the medical technician.
11 The information transmitted to the client computer can include data that represents an
12 amount that is to be paid by the insurer on behalf of the patient. The medical technician can
13 also be informed of any co-payment to be collected from the patient. Because the process of
14 determining whether the claim is in condition for payment can occur almost instantaneously
15 – typically in a matter of seconds or minutes – any co-payment can be collected from the
16 patient while the patient remains in the offices of the health care provider before or after
17 treatment.

18 In view of the foregoing, the invention provides systems and methods for providing
19 almost immediate feedback to the medical technician specifying whether a submitted claim
20 is in condition to be paid. While the speed of response can vary, depending on the data
21 transmission rates between the client computer and the remote server, the processing
22 capabilities of the remote server, and the complexity of the verification process to be
23 conducted by the remote server, the invention can provide almost immediate response to
24 submitted claims. The response time can be short enough that the medical technician can

1 create a claim, submit the claim, and be notified whether the claim is in condition for
2 allowance without discontinuing communication between the client computer and the
3 remote server, while continuing to view the claim form displayed by the client computer, or
4 without proceeding to another patient's claim before receiving the response. In any event,
5 the response time is significantly faster than that of conventional systems, which do not
6 permit the interactive creation and modification of insurance claims.

7 The invention can significantly reduce the inefficiencies that are otherwise
8 experienced in the health care system as claims are submitted, subjected to an adjudication
9 process, and often rejected days, weeks, or longer, after the claim was created. The claim
10 creation and verification systems of the invention also allow health care providers to easily
11 learn of the types of treatments that are approved for payment for specific diagnoses
12 according to the patient's insurance plan. In addition, the invention increases the efficiency
13 of collecting co-payments from patients and increases the likelihood that such co-payments
14 will be made.

15 Additional objects and advantages of the invention will be set forth in the description
16 which follows, and in part will be obvious from the description, or may be learned by the
17 practice of the invention. The objects and advantages of the invention may be realized and
18 obtained by means of the instruments and combinations particularly pointed out in the
19 appended claims. These and other objects and features of the present invention will become
20 more fully apparent from the following description and appended claims, or may be learned
21 by the practice of the invention as set forth hereinafter.

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BRIEF DESCRIPTION OF THE DRAWINGS

In order that the manner in which the above-recited and other advantages and objects of the invention are obtained, a more particular description of the invention briefly described above will be rendered by reference to specific embodiments thereof which are illustrated in the appended drawings. Understanding that these drawings depict only typical embodiments of the invention and are not therefore to be considered limiting of its scope, the invention will be described and explained with additional specificity and detail through the use of the accompanying drawings in which:

Figure 1 is schematic diagram illustrating an interactive system according to the invention, including a client system at the offices of a health care provider and a remote server system, whereby a medical technician can interactively prepare an insurance claim that is in condition to be paid.

Figure 2 illustrates an insurance claim form that enables a medical technician to determine whether and to what extent a patient is a beneficiary of an approved insurance plan.

Figure 3 illustrates an insurance claim form that enables a medical technician to submit an insurance claim including one or more diagnosis codes and one or more treatment codes.

Figure 4a is a flow diagram illustrating one embodiment of the methods of the invention for determining whether and to what extent a patient is a beneficiary of an approved insurance plan.

Figure 4b is a flow diagram depicting one embodiment of the methods for interactively preparing an insurance claim that is in condition to be paid.

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12 If the remote server determines that the submitted claim will not be paid by an
13 insurer, the remote server transmits information to the client computer to inform the medical
14 technician of this result. In response, the medical technician can amend the treatment code
15 or any other desired information on the insurance claim to place the claim in condition to be
16 paid. After amending the claim, the claim is again submitted to the remote server, where it
17 is again analyzed to determine whether it represents health care services that are approved
18 for payment.

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1 Embodiments of the invention include or are incorporated in computer-readable
2 media having computer-executable instructions or data structures stored thereon. Examples
3 of computer-readable media include RAM, ROM, EEPROM, CD-ROM or other optical disk
4 storage, magnetic disk storage or other magnetic storage devices, or any other medium
5 capable of storing instructions or data structures and capable of being accessed by a general
6 purpose or special purpose computer. Computer-readable media also encompasses
7 combinations of the foregoing structures. Computer-executable instructions comprise, for
8 example, instructions and data that cause a general purpose computer, special purpose
9 computer, or special purpose processing device to execute a certain function or group of
10 functions. The computer-executable instructions and associated data structures represent an
11 example of program code means for executing the steps of the invention disclosed herein.

12 The invention further extends to computer systems for interactively creating and
13 submitting insurance claims and determining whether the claims are in condition to be paid.
14 Those skilled in the art will understand that the invention may be practiced in computing
15 environments with many types of computer system configurations, including personal
16 computers, multi-processor systems, network PCs, minicomputers, mainframe computers,
17 and the like. The invention will be described herein in reference to a distributed computing
18 environment, such as the Internet, where tasks are performed by remote processing devices
19 that are linked through a communications network. In the distributed computing
20 environment, computer-executable instructions and program modules for performing the
21 features of the invention may be located in both local and remote memory storage devices.

22 Figure 1 illustrates one embodiment of the systems for interactively creating and
23 submitting insurance claims according to the invention. Client system 10 may be located at
24 the offices of a health care provider in order to allow a medical technician to create and

1 submit insurance claims. As used herein, the term "health care provider" is to be broadly
2 construed to include any physician, dentist, medical practitioner, or any other person whose
3 services can be compensated by a health insurer, a health maintenance organization, or the
4 like. As used herein, the term "medical technician" represents any person who engages in
5 the activity of preparing or submitting insurance claims on behalf of a health care provider.
6 Since medical technicians are typically employees of health care providers, representatives
7 of health care providers, or may be the health care providers themselves, any of the claims
8 that recite steps, operations, or procedures conducted by "health care providers" are to be
9 construed to extend to the same steps, operations, or procedures conducted by "medical
10 technicians", as well.

11 The term "insurance plan" extends to any contractual or other legal arrangement
12 whereby medical and other related expenses are paid on behalf of a beneficiary. Examples
13 of insurance plans include health maintenance organizations, fee-for-service health care
14 plans, employer-sponsored insurance plans, etc.

15 Client system 10 can be a general purpose computer, such as a PC, or a special
16 purpose computer adapted to perform the functions and operations disclosed herein. Client
17 system 10 may include a display device such as a monitor for displaying claim form 12, as
18 will be disclosed in greater detail below, and one or more input devices such as a keyboard,
19 a mouse, etc. for enabling a medical technician to enter the required information to client
20 system 10.

21 The embodiment illustrated in Figure 1 also includes a server system 14 located
22 typically at a remote location with respect to client system 10. Server system 14 can include
23 a general purpose computer or a special purpose computer adapted to execute the functions
24 and operations of the invention. For example, in Figure 1, server system 14 includes a

Referring to Figure 1, when a medical technician desires to prepare an insurance claim for health care services provided to the patient, the medical technician operates client

Figure 2 illustrates one example of a claim form 12A that enables a medical technician to verify that a patient is a beneficiary of an insurance plan and to learn of the details of the insurance plan. In this embodiment, claim form 12A includes a field 26 to which a patient identifier can be entered. Patient identification information, such as patient identifier 28 of Figure 1, is entered by the medical technician claim form 12A of Figure 2.

If it is determined that the patient is a beneficiary, information is likewise transmitted from server system 14 to client system 10 informing the medical technician of the patient's

Claim form 12B also includes one or more fields 46 designed to receive and display treatment codes associated with the diagnosis code of field 44. As used herein, “treatment

One technique that is sometimes used by health care providers to collect more money from insurance plans than is otherwise warranted is the practice of unbundling medical procedures. “Unbundling” consists of performing, for example, multiple medical procedures on a patient through a single surgical incision while submitting an insurance claim for the multiple medical procedures as if they had been performed separately. Typically, when only one incision is required to perform multiple medical procedures, the payment to the operating physician is less than the payment would be if each of the multiple medical procedures had been conducted through separate incisions. Other fraudulent unbundling techniques for submitting claims on multiple medical procedures are sometimes used as well. Thus, server system 14 can analyze the diagnosis codes and the treatment

1 codes for indicia of unbundling practices. Furthermore, server system 14 may conduct any
2 other checks on the submitted claim.

3 If server system 14 determines that insurance claims submitted using the claim forms
4 of the invention are not in the condition to be paid for any reason, server system can transmit
5 information to client system 10 informing the medical technician of this result. In addition,
6 the information transmitted to the client system can indicate the basis for rejecting the
7 insurance claim. Thus the medical technician can be informed that the claim form was not
8 completely filled out, the treatment code is inconsistent with the diagnosis code, or any of a
9 number of other possible reasons for rejecting the insurance claim. In response, the medical
10 technician can amend the insurance claim by entering the correct information to the fields of
11 claim form 12B of Figure 3, if necessary. In other cases, the health care provider can be
12 informed that the recommended treatment defined by treatment code 40 of Figure 1 is not
13 approved for payment by the patient's insurance plan. The health care provider can then
14 advise the patient and decide to proceed with the treatment or to prescribe an alternative
15 treatment that is approved for payment.

16 If the medical technician wishes to amend the insurance claim, the new information
17 is transmitted from client system 10 to server system 14 for processing. For example, the
18 health care provider may decide that an alternative treatment is appropriate for the patient, in
19 which case the medical technician would enter a new treatment code to client system 10.

20 Server system 14 then repeats the previously described process of determining whether the
21 amended insurance claim is in condition for payment. The above-described process can be
22 repeated as many times as desired or necessary to create and submit an insurance claim that
23 describes health care services that are approved for payment by the patient's insurance plan.
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Using the invention, medical technicians and health care providers can be informed of the status of submitted insurance claims in a relatively short amount of time that is significantly less than conventional systems, which may require days, weeks, or more. Indeed, for practical purposes, a response to the submitted insurance claim is received

The systems and methods disclosed herein can be practiced in combination with the systems disclosed in co-pending U.S. Patent Application Serial No. 09/118,668, entitled "Internet Claims Processing System", filed July 17, 1998, which is incorporated by reference for purposes of disclosure. For example, the payment systems and payment tracking systems of the foregoing patent application can be employed with the insurance claim creation and submission techniques of the invention. Moreover, as previously described, if claims submitted to server system 14 of Figure 1 exhibit indicia of fraud or

1 mistake, or exceed a threshold dollar amount, the claims can be subjected to additional
2 adjudication procedures. In one embodiment, the additional adjudication procedures can
3 include adjudication techniques described in U.S. Patent Application Serial No. 09/118,668.

4 The invention can be practiced with additional steps for processing or paying
5 insurance claims or for communicating the status of submitted claims to health care
6 providers and patients. For instance, when a claim has been submitted and approved, an
7 explanation of benefits can be automatically created and sent to the provider, the patient,
8 and/or to an employer of the patient. Electronic funds transfer can be used to execute
9 payment from insurers to health care providers for approved claims.

10 Figure 4A illustrates one embodiment of the methods of the invention for
11 interactively determining whether a particular patient is a beneficiary of an approved
12 insurance plan. In step 80, communication is established between the client system and the
13 server system as described herein. In step 82, the client system receives and displays the
14 claim form to enable the medical technician to enter the information required to complete
15 the insurance claim. As previously noted, the client system can retrieve the claim form from
16 the remote server system or from a local data storage device. In step 84, the medical
17 technician enters the patient identification information and transmits the information to the
18 server system.

19 In decision block 86, if the server system discovers that the patient is not a
20 beneficiary of an approved insurance plan, the server system notifies the client of this result
21 as shown in step 88. Likewise, if the server system determines that the patient is a
22 beneficiary, this result is transmitted to the client system as shown in step 90.

23 Figure 4B illustrates one embodiment of the methods of the invention for creating
24 and submitting insurance claims and determining whether the submitted claim is in

The present invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

What is claimed and desired to be secured by United States Letters Patent is: